SOC710-E

Vis-NIR Hyperspectral Imaging System

The SOC710-E Hyperspectral Imaging System is a precision instrument utilizing a high-speed, low-noise silicon-based CMOS, high quality visible-to-near infrared spectrometer, a novel integrated scanning system and capture and analysis software.

The SOC710-E system's spectral response covers 0.4 – 1.0 microns and can be used under normal lighting conditions.

Unique Internal Scanning Mechanism for Unrivaled Versatility and Portability

Traditional line scanning hyperspectral imaging systems (or "push broom" systems) require a translation stage to move target samples in front of the camera, which necessitates multiple stages or additional hardware to perform varied lab and field experimental setups. With the SOC710-E the sensor moves behind the lens and the scanning speed or translation rate is intimately tied into the exposure parameters of the system. Internal translation eliminates the need for user calculation of speed vs. exposure settings and the need for proprietary external stages.

Built-in scanning makes the 710-E extremely versatile. By eliminating the restrictions of external translation stages the SOC710-E can, as a single package, op-erate from any standard tripod, C-Mount microscope, remote sensing tower, or simply be placed on a bench in the lab.

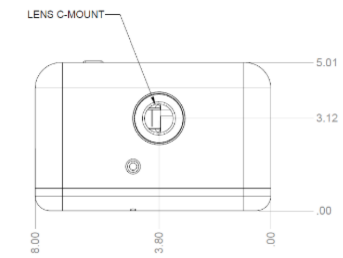
The SOC710-E's small footprint and lack of external stage hardware makes it very portable and the best choice for applications benefited by in-situ field data collection. The jitter-free, precision translation mechanism of the SOC710-E's internal scanner ensures that multiple cubes measured of the same target are in perfect registration.

APPLICATIONS

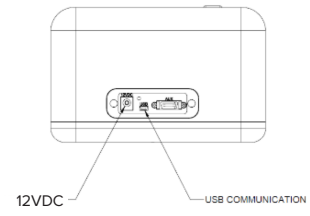
- Microscopy
- Agriculture
- Plant and Vegetation
- Oceanography
- Biology
- Machine Vision
- Mineral Mapping
- Ground Truth
- Art & Antiquities
- Security & Defense
- Thin Films

FEATURE HIGHLIGHTS

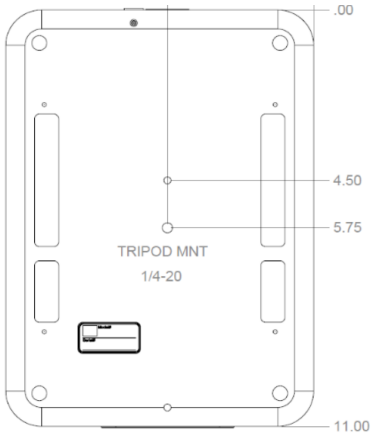
- **Eliminates need for translation or sample stage.**
- **Can be operated in traditional line scanning or internal scanning modes. Switch between acquisition modes with a simple software toggle.**
- **Precision scanning mechanism of the 710-E allows for high dynamic range experiments with two scans of the same scene at different gain settings.**
- **Preview camera provides live video for scene framing and focusing**
- **Data recorded in open format binary compatible with third-party analysis software such as ENVI or MATLAB**



FRONT VIEW



BACK VIEW



BOTTOM VIEW

SOC710-E SYSTEM SPECIFICATIONS

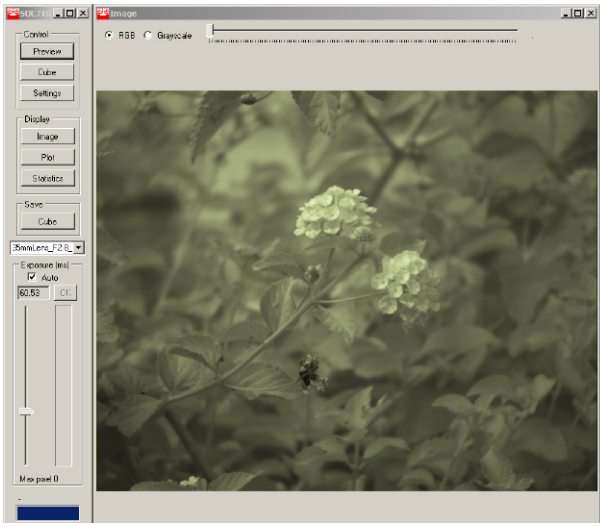
Spectral Range (nm)	400 - 1000
Spectral Resolution (nm)	2.31
Spectral Channels	300
Spatial Pixels (High / Nominal)	1920 / 960*
Dynamic Range	66 dB / 12-Bit ADC
Bit Depth / ADC	12/16
Noise Equivalent Spectral Radiance (NESR)	1.258E-03 W/m**2-sr-nm @ 550nm*
Aperature (F#)	2.8
Lens	C-Mount / NIR Corrected
Spatial Resolution (Avg. RMS Spot Radius)	< 40 microns
Stray Light	< 0.5%
Data Cube Collection Rate (max/nom)	100 / 30 frames/lines per second* 6.96 / 23.2 seconds/cube**
System Interface	USB 2.0
Sensor Material / Type	Silicon / CMOS
Pixel Pitch	5.86 Microns
Weight	3.85 Kg (8.5 lbs)
Dimensions (HWL)	12.7 x 20.3 x 28 cm
Power	12-VDC / 100-240 VAC (50-60 Hz)

Minimum System Requirements
Windows 7, 8 and 10
USB 2.0 Port
1 Gigabyte of Memory
Intel Atom™ class processor

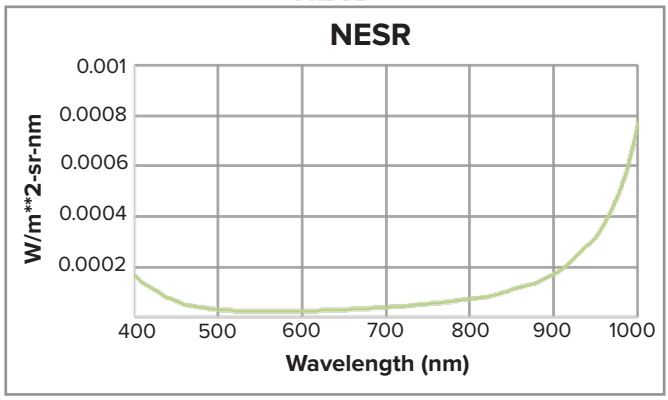
* per binning option ** 960 x 960 x 300 cube dimensions

PREVIEW CAMERA

The 710-E includes SOC's HyperScanner™ data acquisition and SRAnalysis™ software. The live video preview camera allows easy framing and focus of the scene before collecting a data cube in Hyper-Scanner.



Preview mode shows the scene prior to performing an actual scan.



ORDERING INFORMATION

SOC710-E Hyperspectral Imaging System (# 0710-0003)
Internal Scanning VNIR (400-1000nm) Hyperspectral Imaging System with USB Interface. Includes: Hyperscanner and SR-Analysis Software, International Power Supply, USB Cable, Hardshell Case and lens calibration service. Lens sold separately.

Lenses

Product Code	Description
0710-0201	8mm/f1.4 Schneider Compact VIS-NIR Lens
0710-0202	12mm/f1.4 Schneider Compact VIS-NIR Lens
0710-0203	17mm/f1.4 Schneider Compact VIS-NIR Lens
0710-0204	23mm/f1.4 Schneider Compact VIS-NIR Lens
0710-0205	35mm/f1.9 Schneider Compact VIS-NIR Lens

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Accessories and Options

Product Code	Description
0710-0110	Rechargeable battery
0710-0120	Tripod
0710-0130	Field backpack
0710-0140	Ruggedized tablet computer
0710-0160	Calibration Panel
0710-0161	Calibration Panel (NIST)
0710-1022	SOC710-E Annual Maintenance & Calibration
0710-2003	SOC710-E 1 Year Extended Warranty